NAME OF WORK:- Improvements to roads and drains of BB Nagara in ward no. 8 kodigehalli

First and Part Bill

Quality Control Reports

QC ABSTRACT

NAME OF WORK: Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	KERB	Core Compressive strength	One Test		1	1
		Corrected Cylinder Compressive strength	One Test		1	1
		Equivalent Cube Compressive strength	One Test		1	1
7	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
8	RMC(M20)	Compressive Strength(7days and 28days)	4 set /31-50 cum	39.09	8	8

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2021-01-08-26** **Date: 20-11-20**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 17-11-20

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6

Date of test : 18-11-20

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.98	_
2	Finess by Air permeablity method (m^2/kg,Min)	297.3	225m^2/kg, Min
3	Density (gm/cc)	3.11	_
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	285 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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R KARTHIK RECHAN
*Authorized Signatory
Quality Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2021-01-08-26** **Date: 16-12-20**
Project Name	:	Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/WO/156/2019-20
Date of Receipt	:	17-11-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	18-11-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm2	Not less than 37 N/mm^2
3	28 Days	55.5N/mm^2	Not less than 53 N/mm^2

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2021-01-08-26** **Date: 20-11-20**
Project Name	:	Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/WO/156/2019-20
Date of Receipt	:	17-11-20
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	17-11-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	214	214	1.4	98.6	90-100
3	20 mm	5049	5263	35.1	64.9	30-70
4	10 mm	7132	12395	82.6	17.4	10-35
5	4.75 mm	2121	14516	96.8	3.2	0-5
6	Pan	484	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2021-01-08-26** **Date: 20-11-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.9	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.1	
3	Specific Gravity	2.59	–
4	Bulk Density(Loose) (Kg/l)	1.39	–
5	Bulk Density(Compacted) (Kg/l)	1.46	–
6	Water Absorption(%)	0.22	–

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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BBMP, Bangalore

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2021-01-08-26** **Date: 19-11-20**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 17-11-20

Sample Type/ Size : 20mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 17-11-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : **5000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	195	195	3.9	96.1	90-100
3	10 mm	2714	2909	58.2	41.8	25-55
4	4.75 mm	1988	4897	97.9	2.1	0-10
5	Pan	103	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2021-01-08-26** **Date: 19-11-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.8	
3	Specific Gravity	2.57	–
4	Bulk Density(Loose) (Kg/l)	1.41	–
5	Bulk Density(Compacted) (Kg/l)	1.49	–
6	Water Absorption(%)	0.28	–
7	Aggregate crushing Value(%)	23.1	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	21.7	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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R.KARTHIK RECHAN
Authorized Signature
Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2021-01-08-26** **Date: 19-11-20**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 17-11-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 17-11-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

Assistant Executive Engineer
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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2021-01-08-26** **Date: 19-11-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	–
2	Specific Gravity	2.59	–
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Quality Manager

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TEST RESULTS OF STEEL

Date: 21-11-20

Lab ID : **CP-2021-01-08-26**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 20-11-20

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 20-11-20

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

* The results obtained are satisfactory as per standard requirements.

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2021-01-08-26** **Date: 09-12-20**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 05-12-20

Sample Type /Size : Precast Cover Slab (100mm)

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 05/12/2020

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID : **CP-2021-01-08-26** **Date: 09-12-20**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 05-12-20

Sample Type /Size : CC Kerb Stone/ 450*200*400mm

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 05/12/2020

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	150.01	200.51	3.164	17670	182.1	10.3	10.3	12.9
2	B	150.03	200.49	3.193	17675	185.2	10.5	10.5	13.1
3	C	150.01	200.50	3.115	17670	185.1	10.5	10.5	13.1

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Date

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 30/11/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 25-11-20

Customer ID : Drain Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	23/11/2020	30/11/2020	150.42 X 150.43 X 151.28	22627	**8.257**	423.2	18.7	18.5
2	Drain Bottom Slab Concrete	M20	23/11/2020	30/11/2020	151.66 X 151.11 X 151.82	22916	**8.655**	427.0	18.6	
3	Drain Bottom Slab Concrete	M20	23/11/2020	30/11/2020	150.66 X 150.12 X 149.99	22616	**8.836**	410.2	18.1	

*The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 21/12/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 25-11-20

Customer ID : Drain Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	23/11/2020	21/12/2020	149.88 X 149.69 X 149.05	22437	**8.134**	532.7	23.7	23.3
2	Drain Bottom Slab Concrete	M20	23/11/2020	21/12/2020	149.52 X 150.62 X 150.31	22522	**8.579**	514.9	22.9	
3	Drain Bottom Slab Concrete	M20	23/11/2020	21/12/2020	151.00 X 149.56 X 150.51	22584	**8.904**	524.7	23.2	

*The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 30/11/2020

Lab ID	:	**CP-2021-01-08-26**
Project Name	:	Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli
Agency	:	Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010
Customer's Reference	:	BBMP/EE/BTP/WO/156/2019-20
Date of Receipt	:	25-11-20
Customer ID	:	Drain Bottom Slab Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	30/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	23/11/2020	30/11/2020	150.47 X 150.89 X 151.42	22705	**8.257**	413.0	18.2	18.1
2	Drain Bottom Slab Concrete	M20	23/11/2020	30/11/2020	151.55 X 151.19 X 150.14	22914	**8.655**	414.7	18.1	
3	Drain Bottom Slab Concrete	M20	23/11/2020	30/11/2020	149.73 X 151.15 X 151.99	22631	**8.836**	408.0	18.0	

*The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 21/12/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 25-11-20

Customer ID : Drain Bottom Slab Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	23/11/2020	21/12/2020	149.73 X 150.53 X 151.22	22540	**8.134**	537.1	23.8	23.2
2	Drain Bottom Slab Concrete	M20	23/11/2020	21/12/2020	149.46 X 149.81 X 150.63	22391	**8.579**	493.3	22.0	
3	Drain Bottom Slab Concrete	M20	23/11/2020	21/12/2020	149.55 X 149.86 X 151.36	22412	**8.904**	533.3	23.8	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 03/12/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 28-11-20

Customer ID : Drain Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 03/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	26/11/2020	03/12/2020	149.75 X 149.91 X 151.89	22448	**8.257**	422.4	18.8	18.6
2	Drain Side Wall Concrete	M20	26/11/2020	03/12/2020	151.26 X 151.04 X 149.79	22847	**8.655**	423.0	18.5	
3	Drain Side Wall Concrete	M20	26/11/2020	03/12/2020	150.98 X 151.57 X 151.53	22885	**8.836**	420.2	18.4	

*The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

FOR CIVIL Pro.

CIVIL Pro BANGALORE Sig..... Date.....

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 24/12/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 28-11-20

Customer ID : Drain Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	26/11/2020	24/12/2020	150.87 X 150.44 X 149.54	22698	**8.134**	527.3	23.2	23.0
2	Drain Side Wall Concrete	M20	26/11/2020	24/12/2020	151.03 X 150.92 X 150.23	22795	**8.579**	511.1	22.4	
3	Drain Side Wall Concrete	M20	26/11/2020	24/12/2020	149.17 X 149.62 X 149.84	22320	**8.904**	522.4	23.4	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

FOR CIVIL Pro.

CIVIL Pro Sig. Date BANGALORE

R KARTHIK RECHAN
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 03/12/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 28-11-20

Customer ID : Drain Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 03/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	26/11/2020	03/12/2020	149.06 X 150.42 X 150.13	22421	**8.257**	409.4	18.3	18.4
2	Drain Side Wall Concrete	M20	26/11/2020	03/12/2020	150.64 X 150.85 X 151.10	22723	**8.655**	425.9	18.7	
3	Drain Side Wall Concrete	M20	26/11/2020	03/12/2020	151.50 X 151.90 X 149.62	23013	**8.836**	421.9	18.3	

*The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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CIVIL Pro Sig. Date. BANGALORE

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2021-01-08-26** **Date: 24/12/2020**

Project Name : Improvements to Roads and Drains of B.B.Nagara in ward no. 8 Kodigehalli

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/156/2019-20

Date of Receipt : 28-11-20

Customer ID : Drain Side Wall Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	26/11/2020	24/12/2020	150.81 X 151.13 X 149.76	22792	**8.134**	529.1	23.2	22.8
2	Drain Side Wall Concrete	M20	26/11/2020	24/12/2020	150.53 X 149.77 X 151.18	22544	**8.579**	496.9	22.0	
3	Drain Side Wall Concrete	M20	26/11/2020	24/12/2020	151.55 X 149.94 X 151.35	22724	**8.904**	526.9	23.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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